

IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended) A mobile IP network system comprising:
a plurality of radio access networks each connected to mobile stations via radio links; and
an IP network to which a plurality of packet nodes for transferring IP packets are connected,
wherein each of the radio access networks has at least one base station controller and at least one radio base station which is connected to the base station controller to perform radio communications with a plurality of mobile stations, and
A wherein each of the base station controllers in the radio access network is connected to the plurality of packet nodes to each other through a network, receives an identifier of a previous packet node from another base station controller when one of the mobile stations moved into a control area of the base station controller form a control area of the another base station controller, and selects either the previous packet node or a preliminarily designated specific packet node one of the plurality of packet nodes in accordance with a communication state of each the moved mobile station, thereby to establish a logical connection to be used in selectively carry out IP packet communication of for the mobile station using a previous identifier of a logical connection having been established between the previous packet node and the mobile station or an identifier of a new logical connection established between the

specific packet node and the mobile station depending on the communication state of the mobile station.

2. (currently ~~amended~~) A mobile IP network system according to claim 1, wherein each of said base station controllers selects, with respect to athe mobile station moved from athe control area of said another radio access network to the control area of the base station controller, asaid previous packet node ~~which has communicated with~~ when the mobile station in the control area of the another radio access network is in a state of communicating IP packets with the previous packet node and requests the previous packet node to establish a logical connection communicate IP packets for the mobile station with the base station controller.

3. (currently ~~amended~~) A mobile IP network system according to claim 2, wherein each of said base station controllers has means for monitoring a ~~transmitting and receiving state of data to and from a~~ communication packets of the mobile station which has moved from the control area of said another ~~radio access network~~ base station controller, thereby to ~~cancel~~ close the ~~logical connection~~ communication between the base station controller and the previous packet node, and to establish a new logical connection ~~for~~ between the mobile station ~~between the base station controller and a~~ said ~~preliminarily designated~~ specific packet node via the base station controller, upon detecting that data transmission and reception of the mobile station is ceased.

4. (currently ~~amended~~) A mobile IP network system according to claim 3, wherein said specific packet node has means for notifying to a home agent node of the mobile station which is connected to the IP network, of that the mobile station is in a control area of the specific packet node after setting of a the new logical connection for the mobile station so that the home agent node having received the notification transfers IP packets, which are destined for the mobile station and received thereafter from the IP network, to the specific packet node.

5. (currently ~~amended~~) A mobile IP network system according to claim 1, wherein each of ~~the~~said plurality of packet nodes has a foreign agent function for transferring an IP packet received from a home agent node connected to the IP network to any of the base station controllers.

6. (currently ~~amended~~) A method of switching a connection for communication between a mobile station connected to any of a plurality of radio access networks via a radio link and a plurality of packet nodes connected to an IP network, comprising:

a step of establishing a first logical connection to be used for ~~an~~ IP packet communication of between a mobile station connected to a first radio access network, ~~between the mobile station and a first packet node which is preliminarily related with~~ the first radio access network;

a step of connecting the mobile station to a second radio access network adjacent to the first radio access network when the mobile station moves into an area of the second radio access network; and

a step of ~~establishing a second logical connection between~~ requesting from the second radio access network and to the first packet node to communicate IP packets for the mobile station with the second radio access network while maintaining the first logical connection,

wherein ~~the IP packet~~ packets are communicated ~~communication between the mobile station and the first packet node is maintained~~ using an identifier of the first logical connection via the second ~~logical connection~~ radio access network.

7. (currently ~~amended~~) A connection switching method according to claim 6, further comprising a step of ~~canceled~~ closing, upon detecting that data transmission and reception ~~in the second logical connection is~~ ceased, the ~~second first~~ logical connection and establishing a ~~third~~ new logical connection to be used for ~~an IP packet communication of~~ between the mobile station ~~between the second radio access network and a second packet node via the second radio access network,~~ which is said second packet node being preliminarily related with the second radio access network.

8. (currently ~~amended~~) A base station controller for a radio access network for ~~transmitting and receiving an~~ communicating IP packet packets to and

~~from with a one of packet node nodes each of which~~ is connected to an IP network and has a foreign agent function, comprising:

a first communication interface for connection to a radio base station, a second communication interface for communication with a plurality of packet nodes connected to the IP network, and a control unit connected to the first and second communication interfaces,

wherein the control unit selectively requests one of the packet nodes selected in accordance with a communication state of a mobile station connected to the radio base station via a radio channel to ~~establishes~~ establish a new logical connection to be used for an IP packet communication ~~of between a the mobile station connected to the radio base station via a radio channel, between the base station and any of the packet nodes~~ node or to transfer IP packets for the mobile station to the base station controller using a previous identifier of a logical connection having been established between the mobile station and the packet node, via the second interface.

9. (currently amended) A base station controller according to claim 8, wherein said control unit has means for selecting, when a mobile station has moved into a control area of the base station controller from another radio access network, a first packet node which has been communicating with a ~~the~~ mobile station ~~in a control area of the~~ another radio access network, to ~~establish a first logical connection to be used for the IP packet communication of~~ request the first packet node to transfer IP packets for the mobile station which has moved into a control

~~area of the base station controller from the another radio access network~~ to the base station controller using said previous identifier of the logical connection having been established.

10. (currently ~~amended~~) A base station controller according to claim 8, wherein said control unit has means for notifying a base station controller in ~~another one of said radio access network~~ networks of identification information of a previous packet node which has ~~been communicated~~ communicating with the mobile station when the mobile station moved out from a the control area of the base station controller to the another a control area of the radio access network.

11. (currently ~~amended~~) A base station controller according to claim 9, wherein said control unit comprises:

means for monitoring ~~transmission data in the first logical connection~~ communication packets for the mobile station which is communicating with said first packet node; and

means for switching ~~the a first logical connection having been established between the mobile station and the first packet node to a second logical connection which is connected to established between the mobile station and a second packet node~~ preliminarily related to the base station controller when it is detected by the monitoring means that the transmission data of communication packets for the mobile station is stopped.

12. (currently amended) A base station controller according to claim 11, wherein said second communication interface is connected to a communication network for connecting the plurality of packet nodes, and said switching means ~~cancels~~closes the first logical connection by requesting said first packet node to communicate IP packets for said mobile station with the base station controller and establishes asaid second logical connection connected by requesting to the said second packet node to communicate IP packets for said mobile station with the base station controller, second packet node, which is preliminarily designated to the base station controller, when said monitoring means detects the stop of transmission data of communication packets.